

BLACKBERRY PLANT NAMED
'SONOMA'

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1. BACKGROUND OF THE INVENTION

This invention relates to a new cultivar of blackberry called 'Sonoma'. The new
10 cultivar was developed from hybridization of the patented female cultivar 'Navaho', U.S.
Plant Patent No. 6679, with the unpatented male cultivar 'Hull Thornless'. The parents
were crossed in Spring 1991 whereafter fruit and seed were collected to produce seedlings
for field planting in Watsonville, California in 1991. The new cultivar was selected in July
1993 for its good flavor, thornless canes, season of production and firm, attractive fruit.
15 The cultivar has been asexually propagated, and reproduced true to type plants by *in vitro*
shoot tip culture.

2. SUMMARY OF THE INVENTION

20 The present invention provides a new and distinct blackberry cultivar named
'Sonoma'. The variety is botanically identified as Rubus L. subgenus Rubus. The new
cultivar produces a florican crop which begins in early July and continues until mid-
September. The new blackberry variety is distinguished from other varieties by a number
of characteristics as set forth in Table 1. In particular, the new cultivar is distinguished by
25 its thornless canes with fruit of excellent flavor and firmness which ripens at a time of the
year when few other similar cultivars exist.

3. COMPARISON TO SIMILAR VARIETIES

30 The varieties that we believe to be similar to 'Sonoma' from those known to us are
the male parent 'Hull Thornless' and 'Chester', both unpatented cultivars. 'Sonoma' is
particularly different from these cultivars by having slightly larger, more uniform shaped
fruit, by ripening earlier, and having a less acidic flavor. Further detailed comparison to
'Chester' is presented in Table 1.

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4. BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the fruit, leaves and shoot of the new cultivar, in color as nearly true as reasonably possible in color illustrations of this type.

Fig. 1 is a photograph showing a primocane shoot and mature leaf of 'Sonoma'.

Fig. 2 is a photograph of a 'Sonoma' fruiting lateral with fruit in various stages of development.

5. DESCRIPTION OF THE NEW VARIETY

The following detailed description of the new blackberry cultivar, 'Sonoma', is based upon recorded observations of plants and fruit grown between 1996 and 2000 in Watsonville, California, and is believed to apply to plants of the 'Sonoma' cultivar grown in similar conditions of soil and climate elsewhere. This description is in accordance with terminology used by the International Union for the Protection of New Varieties of Plants (UPOV). Throughout this specification, color names beginning with a small letter signify that the name of the color, as used in common speech, is aptly descriptive. Color data beginning with a capital letter and followed by an alphanumeric code indicate the most similar color designations as provided by the Royal Horticultural Society (RHS) Colour Chart published by the Royal Horticultural Society of London, England. Color designations, color descriptions, and other phenotypical descriptions may deviate from the stated values and descriptions depending upon variation in environmental, seasonal, climatic and cultural conditions.

5.1 CHARACTERISTICS OF THE NEW VARIETY

Table 1 provides information on the plant and fruit characteristics of the new blackberry cultivar, 'Sonoma', compared with characteristics of the unpatented blackberry cultivars, 'Olallie' and 'Chester'. Both 'Olallie' and 'Chester' are currently important cultivars for fresh market shipping, and thus are comparable to the proposed use of the new invention, 'Sonoma'. Observations of 'Sonoma' and 'Chester' were taken in side-by-side comparison in 1999 and 2000.

The new blackberry cultivar is particularly characterized and distinguished from other cultivars by its fruit with excellent flavor and shipping quality. The fruit of 'Sonoma' is very attractive with a solid black color that rarely shows post harvest drupelet color reversion.

The canes of 'Sonoma' are thornless and of low to moderate vigor until well established. Yield of the new cultivar is moderate in comparison with other varieties.

Sonoma is distinguished from its pollen parent, 'Hull Thornless', by being earlier, less vigorous, and having larger less acidic fruit. Sonoma is distinguished from its seed
5 parent, 'Navaho', by having greater vigor and larger fruit.

TABLE 1
PLANT CHARACTERISTICS OF 'SONOMA'

10 **Sonoma** **Olallie** **Chester**

GENERAL

Vigor	Low-moderate	Moderate-high	high
Growth habit	semi-upright	trailing	semi-upright
Productivity	medium	high	high
Self fruitfulness	yes	yes	yes
15 Number of young shoots	medium	medium	medium

CANES

Primocanes	absent	present	present
Anthocyanin coloration	absent	present	absent
Spines	-	purple	-
color	-	horizontal	-
attitude of tip	-	heavy	-
20 texture	absent	present; irregularly distributed	absent
presence and distribution on petioles	-	medium	-
density in central third of shoot	3	2.6	3.1
Internodal distance (cm) - central third	weak	weak	weak
25 of mature cane	strong	medium	strong
Glaucosity on full grown shoot	angular	rounded to angular	angular to grooved
Strength of full grown shoot			
Cane cross section			

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Sonoma

Olallie

Chester

LEAVES

- 5 Relief between veins
Number of leaflets
Leaf color
 upper side
 underside
Glossiness of upper surface
Leaf cross section
Terminal leaflet
 length (cm)
 width (cm)
 shape
10 tip
 base
 margin
Lateral leaflet
 overlap of lateral leaflets
 length (cm)
 width (cm)
 shape
15 tip
 base
 margin
Petiole
 mean length (cm)
 range
 pigmentation of upper surface
20 pigmentation of underside
Length of stalklet
Rachis length (cm) between terminal and adjacent
lateral leaflets)
Stipule orientation

medium	medium	medium
usually 5	usually 3	usually 5
medium	medium	light
139A, 147A	137A, 137B	147A
147B	147B	146A
medium	medium	dull
concave	concave-flat	concave

10.8	8.9	11.1
8.5	7.6	9
cordate	cordate	cordate
acuminate	acuminate	acuminate
rounded	cordate	cordate
double serrate	double serrate	double serrate

overlapping	overlapping	overlapping
10.3	8.7	10.2
7.1	6.1	7.1
ovate	ovate	ovate
acuminate	acuminate	acute
rounded to acute	acute	acute
double serrate	double serrate	serrate

9.4	5.3	7.9
7.3-11.1	3.6-8.7	3.9-10.2
reddish	green - slightly pink	purple
green	green - slightly pink	green - pinkish
short	very short	medium
3.8	2.8	3.1
erect	variable; clasping to erect	erect

25 FLOWERS

- Time of bud burst
Time of beginning of flowering
Flower size
Petal size
 length (mm)
 width (mm)
30 Anthocyanin color of pedicel
Intensity of pedicel coloration
Length of pedicel
Flower number (third node from tip of lateral)

late	early	late
late	early	late
medium-large	small to medium	small to medium

19.6	16.5	18.3
14	11.7	10.9
absent	absent	present
-	-	weak
short	long	short
1.25	3.6	2

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Sonoma

Olallie

Chester

FRUIT

	Harvest season	mid-late	early	mid-late
	Dimensions	3.6	5.2	3.2
5	weight (g/fruit)			
	size	medium-small	medium	small
	length (cm)	2.4	3.3	1.9
	width (cm)	2.1	1.4	1.9
	Fruiting lateral length (in mid cane)	medium-long	medium	medium - long
	mean number of fruit per lateral	11.6	6.2	22.8
	range	8-16	3-9	17-40
	Shape	ovate to elliptic longer than broad	narrow ovate much longer than broad	round to ovate as long as broad
10	Color	black	purple-black to black	black
	immature	183A	178A - 183B	184A
	maturing	187A	187A	200A - 202A
	mature	202A	200A	202A
	Firmness	medium	medium	firm
	Glossiness	medium	medium - strong	medium
15	Soluble solids	12	9.7	9.9
	Titrateable acidity (% as citric acid) (ml of added 0.1N NaOH to pH 8.1)	9	13.3	9.9
	Number of drupelets per fruit	60	86	40

5.2 NUCLEIC ACID FINGERPRINTING

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Distinctive patterns of polymorphism can be detected using a variety of nucleic acid analysis methods. In one non-limiting example, molecular genetic maps can be produced using random amplified polymorphic DNA (RAPD) (Williams et al., 1990, "DNA polymorphisms amplified by arbitrary primers are useful as genetic markers", Nucleic

25 Acids Res. 18(22):6531-5). Using a variety of oligonucleotide primers, alone or in combination, RAPD analysis of Sonoma, Chester, and Olallie yielded DNA fragment patterns that uniquely distinguish each of these genetically distinct genotypes.

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